Claims

1.   A method for maintaining a database for display of digital television broadcast signals carried by a digital broadcast stream including system control data, the system control data including first information relating to a first broadcast standard and optionally also including second information relating to a second broadcast standard, the method comprising:

receiving the digital broadcast stream;

extracting the first information from the system control data;

storing a first set of data entries from the extracted first information;

extracting the second information from the system control data if the second information is present in the system control data; and

storing a second set of data entries only if the extracted second information is consistent with the first set of data entries.

2.   A method as recited in claim 1 wherein the first information comprises MPEG-2 table information and the second information comprises ATSC table information.

3.   A method as recited in claim 2 wherein storing a first set of entries comprises:

storing a first portion of the first set of data entries;

receiving additional system control data;

extracting additional first information from the additional system control data; and

storing a second portion of the first set of data entries from the extracted additional first information.

4.   A method as recited in claim 3 wherein storing a second portion of the first set of data entries comprises storing data from transmitted MPEG-2 Program Mapping Tables.

5.   A method as recited in claim 3 wherein storing a second set of data entries comprises storing one of the second data entries only if a second portion of a corresponding one of the first set of data entries has previously been stored.

6.   A method as recited in claim 5 wherein storing a second set of data entries comprises storing information contained in transmitted Program and Specific Information Protocol tables.

7.   A method as recited in claim 2 wherein the first information includes a version number and the method comprises:

    comparing the version number of extracted first information to the version number of a previously stored first set of data entries;

    ignoring the extracted first information if the compared version numbers are equal;

    constructing a new set of first data entries if the compared version numbers are not equal; and

    deleting the existing set of previously stored first data entries if the compared version numbers are not equal.

8.   A method as recited in claim 2 wherein the first information includes a transport stream ID and the method comprises:

    comparing the transport stream IDs of the extracted first information and stored first set of data entries; and

resetting the stored first set of data entries and storing a new set of
first data entries if the compared transport stream IDs are
not equal.

9.   A method as recited in claim 2 wherein the first information comprises a
plurality of separate sections and at least one program listing, and storing
a first set of data entries comprises storing at least one program entry;
and wherein the method comprises:

comparing the at least one program listing of the extracted first
information to a previously stored program entry;

if the at least one program listing of the extracted first information
does not correspond with a stored program entry, storing the
at least one program listing of the extracted first information
as an additional program entry and creating a new listing in
a channel list; and

deleting all program entries which do not have a corresponding
entry in the channel list only if the extracted first information
comprises the last section of the first information.

10.   A method as recited in claim 2 wherein storing a first set of data entries
comprises storing a plurality of program data entries each containing data
for a separate MPEG-2 program from an MPEG-2 Program Association
Table.

11.   A method as recited in claim 2, wherein storing a first set of data entries
comprises storing a data entry with a corresponding database link
structure.

12.   A method as recited in claim 11, wherein:

storing a first set of data entries comprises storing at least one data entry over a plurality of noncontiguous portions of memory; and

the database link structure includes pointers linking the noncontiguous portions of memory.

13. A method as recited in claim 11, wherein the database link structure includes a reference field manipulated by external tasks to indicate pending uses of a corresponding data entry by external task.

14. A method as recited in claim 13 comprising:

generating a delete request to delete a data entry upon detection of a selected condition; and

executing the delete request only if a corresponding reference field indicates no pending uses of the corresponding data entry.

15. A system for maintaining a database for display of digital television broadcast signals carried by a digital broadcast stream including system control data, the system control data including first information relating to a first broadcast standard and optionally also including second information relating to a second broadcast standard, the system comprising:

a memory;

a tuner which receives the digital broadcast stream;

a demultiplexer which extracts the first information from the system control data; and

a control module which stores a first set of data entries from the extracted first information in a database in the memory, commands the demultiplexer to extract second information from the system control data if second information is present in the system control datas; and stores in the database a

second set of data entries from the extracted second information only if the extracted second information is consistent with the first set of data entries.

16. A system as recited in claim 15 wherein the first information comprises MPEG-2 table information and the second information comprises ATSC table information.

17. A system as recited in claim 16 wherein the first set of entries comprises:
a first portion of the first set of data entries extracted from the first information; and
a second portion of the first set of data entries extracted from additional first information received at a time following extraction of the first portion of the first set of data entries.

18. A system as recited in claim 16 wherein the second portion of the first set of data entries comprises information extracted from transmitted MPEG-2 Program Mapping Tables.

19. A system as recited in claim 18 wherein the second set of data entries comprises information extracted from transmitted Program and Specific Information Protocol tables.

20. A system as recited in claim 15 wherein the first information includes a version number.

21. A system as recited in claim 16 wherein the first information includes a transport stream ID.

22. A system as recited in claim 16 wherein the first information comprises a plurality of separate sections and at least one program listing, and the first set of data entries comprises at least one program entry.

23. A system as recited in claim 16 wherein the first set of data entries comprises a plurality of program data entries each containing data for a separate MPEG-2 program from an MPEG-2 Program Association Table.

24. A system as recited in claim 16, wherein the first set of data entries comprises a data entry with a corresponding database link structure.

25. A system as recited in claim 24, wherein:

the first set of data entries comprises information stored over a plurality of noncontiguous portions of memory; and

the database link structure includes pointers linking the noncontiguous portions of memory.

26. A system as recited in claim 24, wherein the database link structure includes a reference field manipulated by external tasks to indicate pending uses of a corresponding data entry by external task.

27. A system as recited in claim 15, wherein the functions of the tuner, demultiplexer, and control module are performed by a multimedia processor.

28. A computer program product comprising a computer-usable medium having computer-readable code embodied therein for maintaining a database for display of digital television broadcast signals carried by a digital broadcast stream including system control data, the system control data including first information relating to a first broadcast standard and

optionally also including second information relating to a second broadcast standard, the computer-usable medium comprising:

a component configured to receive the digital broadcast stream;

a component configured to extract the first information from the system control data;

a component configured to store a first set of data entries from the extracted first information;

a component configured to extract second information from the system control data if second information is present in the system control data; and

a component configured to store a second set of data entries only if the extracted second information is consistent with the first set of data entries.